

# LABORATORY SAFETY EVALUATION PROGRAM DOCUMENT

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## Contents

1.	PURPOSE .....	1
2.	RESPONSIBILITIES .....	1
3.	PRE-EVALUATION .....	2
4.	EVALUATION .....	4
5.	REPORT .....	6
6.	FOLLOW-UP / VERIFICATION .....	6
7.	MID-YEAR CHECK-IN .....	6
8.	ESCALATION PROCESS .....	6

## 1. PURPOSE

The Laboratory Safety Evaluation Program is comprised of a team of EH&S specialists from various scientific backgrounds providing support to laboratories for compliance with campus policies and local, state, and federal regulations. The purpose of the Laboratory Safety Evaluation Program is to evaluate research and teaching laboratories spaces at UCR and ensure that each laboratory conform with the safe and healthy work conditions and practices as identified in the Injury and Illness Prevention Plan (IIPP) and the Chemical Hygiene Plan (CHP). The evaluation process consists of three components: documentation, general laboratory safety and chemical safety.

## 2. RESPONSIBILITIES

### Environmental Health and Safety

An EH&S Specialist is expected to demonstrate knowledge and expertise in a courteous and professional manner. Each EH&S Specialist is assigned to a Department and serves as the EH&S liaison.

The EH&S Specialists will:

- Create relationships built on trust and mutual goals
- Conduct in-person evaluations of each space for each assigned departments
- Conduct follow-ups verifications of in-person evaluations
- Proactively work and assist researchers to correct findings
- Aid the laboratories in standard operating procedure development, revision and improvement
- Conduct laboratory hazard assessments
- Address faculty/researcher needs
- Facilitate coordination with Subject Matter Experts within EH&S
- Provide guidance on EH&S matters
- Communicate program changes and updates

### Departments

Departments are responsible for the broad implementation of UC Policies and Procedures by:

- Reinforcing safety

- Addressing safety concerns
- Partnering with EH&S to provide support and consultation to PI/researchers to ensure all laboratory personnel conduct research in a safe manner and in compliance with UC Policy and Procedures.
- Collaborate with EH&S to establish mutual goals.

### **Principal Investigators (PIs)**

A principal investigator (PI) is the lead researcher for the grant project, such as a laboratory study or a clinical trial. The phrase is also often used as a synonym for "head of the laboratory", "research group leader", or "responsible party". The PI is directly and primarily responsible for the safe operation of their laboratory, and for compliance by all their laboratory personnel with all UCR Laboratory Safety policies and procedures. PIs are also responsible for completing an annual laboratory hazard assessment in LHAT.

### **Laboratory Personnel**

Laboratory Personnel are individuals who work in the laboratory including PIs, research scientists, post-doctoral fellows, laboratory managers, technicians, undergraduate and graduate students, visiting scientists, laboratory volunteers, and support personnel. Laboratory personnel are responsible for the following:

- Familiarize with hazardous materials that are in the laboratory regardless of whether or not they work directly with them
- Follow all laboratory safety policies and procedures
- Know all emergency procedures stabled by the PI
- Complete all appropriate training and verify documentation of training
- Follow all laboratory practices as outlined in the Laboratory Safety Manual.

## **3. LABORATORY/TECHNICAL AREAS**

The Laboratory Safety Evaluation Program reviews laboratory/technical area as defined by UCOP policies and UCR Research Integrated Safety Committee (RISC). A laboratory/technical area is a location where the use or storage of hazardous materials occurs or where equipment may present a physical or chemical hazard. It includes, but is not limited to:

- Research laboratories, including but not limited to, greenhouses, insectaries and quarantine facilities
- Teaching laboratories
- QA/QC and analytical laboratories
- Stock rooms
- Storage rooms
- Waste accumulation areas/locations
- Cold rooms
- Machine and other workshops
- Vivaria
- Visual/performing arts studios and shops
- Computational laboratories

## 4. PRE-EVALUATION

Before the evaluation, become familiar with as many relevant facts as possible about the workplace, such as its evaluation history, the nature of the research, authorization statuses, and particular standards that might apply. This preparation provides the EH&S Specialist with a knowledge of the potential hazards and processes that he or she may encounter, and aids in selecting appropriate personal protective equipment for use against hazards during the evaluation.

### a. Determine locations to be inspected

Verify with department's laboratory safety officer (LSO) or Department Chairs a list of current PIs with research laboratories. Locations can be determined using Laboratory Hazardous Assessment (LHAT) and using Facilities Management System (FMS). If location data is not found, contact laboratory delegate, LSO or PI directly.

### b. Review information related to the location

#### i. *Laboratory*

To ensure a comprehensive evaluation of each laboratory is effective, it is important to understand each laboratory prior to an evaluation. The following should be reviewed prior to an evaluation:

- Identify the type of research being conducted.
- Review Chemical Inventory to determine hazard types and high-hazard chemicals.
- Determine the potential hazards to ensure the appropriate PPE is worn.

Work with each subject matter expert to determine approval of research.

#### ii. *Laboratory Hazard Assessment (LHAT)*

Review the latest certified hazard assessment to determine types of hazards present in laboratory, and review laboratory roster.

#### iii. *Use Authorizations*

Using the types of hazards identified in LHAT, verify appropriate use authorizations (e.g. IRB, BUA, AUP, CSUA, RUA) have been submitted and are current. When use authorizations are missing or expired, notify respective Officer.

#### iv. *Training*

Using [ucrllearning.ucr.edu](http://ucrllearning.ucr.edu), verify that everyone has completed the appropriate training modules. Required training modules are determined on the hazards identified in the certified laboratory hazard assessments.

At a minimum, all laboratory personnel are required to take the following:

- Laboratory Safety Fundamentals (initial) or the Refresher(subsequent 3 years)
- Hazardous Waste Management - annual
- Fire Extinguisher – annual

If additional hazards, such as biological, radioactive, pyrophoric materials, etc., are identified in the certified laboratory hazard assessments, then refer to [Research Approval and Training Requirements](#) to identify other training requirements needing verification of completion.

#### v. *Personal Protective Equipment (PPE)*

Using LHAT, determine the appropriate PPE to be worn in the laboratory while conducting evaluation. If PPE requirements are unknown, wear minimum PPE requirements during evaluations. The minimum PPE are laboratory coat, safety glasses, long pants and closed toe shoes.

vi. *Incident History*

Review previous incidents that occurred in the laboratory space, if any.

c. **Scheduling Evaluation**

To ensure effectiveness, contact the PI, Department LSO, and/or Lab Manager/Delegate to schedule the in-person evaluation. Once a time has been confirmed, place it on your Outlook calendar and invite the laboratory contact(s), PI, and/or college safety representative. Always include the PI in your communications. Be sure to include a copy or website link of the evaluation checklist.

## 5. EVALUATION

Prior to entering the laboratory area, don appropriate PPE for hazards identified in LHAT. Display official EH&S credentials. Ask to meet with the appropriate laboratory representative. Introduce yourself and explain the purpose of the visit.

a. *Purpose and Process*

Explain the purpose of the visit, the scope of the evaluation, the standards that apply, what to expect after the evaluation, expectations to correct findings.

b. *Accompaniment*

Evaluations should be conducted with the accompaniment of the PI or a laboratory representative. If this cannot be accommodated, then the evaluations may be conducted with the LSO, DSC, Safety Manager, or designee chosen by the department. Where there is no representative, such as an abandoned laboratory, conduct the evaluation, submit report and discuss findings with the department Chair.

c. *Solicit questions*

While conducting evaluations, communicate that any questions regarding the process are welcomed. At a minimum, the following questions should be asked during each evaluation:

- What additional services/resources can EH&S provide you and/or laboratory to encourage a safe working environment?
- What are some challenges that your laboratory encounters where EH&S can provide additional guidance?

d. *Evaluation*

During the evaluation, identify unsafe or unhealthy working conditions as well as issues that are not in alignment with university policies and procedures, local, state, and federal regulations.

i. *Laboratory Safety Manual (LSM)*

Ensure laboratory have the UCR Laboratory Safety Manual, which is a collection of resources for individuals working in research and teaching laboratories that is comprised of safe work procedures, chemical safety information, training records, laboratory equipment safety

information and other resources. In order to be compliant with local, state, and federal regulations, each laboratory should have, at a minimum, documents listed below in the LSM.

- [Injury & Illness Prevention Program](#)
- [Chemical Hygiene Plan](#)
- Standard Operating Procedures (laboratory specific)
- Training Records
- Laboratory Hazard Assessment (LHAT)
- Use Authorizations (Biological, Radioactive, Controlled Substances, Animal Use Protocols, etc.)

*ii. Interview*

During evaluations, interview laboratory workers, in private, about safety and health conditions and practices in the laboratory. Ensure laboratory workers understand that unsafe and unhealthy conditions identified will remain anonymous. Restate the purpose of the evaluation program, if needed to build trust.

Questions to Consider:

- What are the top three (3) safety concerns do you have while working in the laboratory?
- What are your laboratory procedures when there is an emergency/incident?
  - Reference Incident/Hazard Notification System and Emergency Procedure poster, and Notice to Employees.
- How do you store your hazardous materials?
  - Reference proper chemical segregation practices.
- Who conducts laboratory-specific training and how do you document it?
  - Reference [Laboratory Site Specific Training Checklist](#)
- What are your laboratory procedures when working alone in the laboratory?
- What do you refer to when you encounter a safety concern and how would you address it?
  - Reference Laboratory Safety Manual

*iii. EH&S Updates and Resources*

During evaluations, provide EH&S updates and resources to laboratory workers. Remove any resources that are not current. Discuss accident/incident notifications and procedures. Provide the following items to the laboratory prior to the end of the evaluation:

- Door placard
- Emergency Procedure Poster
- Labels – “no food or drinks,” “warning,” “biohazard,” “radiological,” etc.
- Sharps container
- Secondary containers
- Any additional resources available

*iv. Corrective Actions*

When unsafe and unhealthy conditions and practices are observed during evaluation, immediately address/correct the situation, if possible. If situation cannot be immediately corrected, provide interim measures or feasible recommendations to correct the situation or

provide background information as to why the situation is considered unsafe and unhealthy. If training is not complete, do not allow individuals to continue working until training is complete.

v. *Documentation*

Document all unsafe and unhealthy conditions and practices, including those that were corrected immediately in the inspection tool (e.g. UC Inspect). Be descriptive in the observation and location. Capture photographs and/or video to include as part of the supporting documents in the final report.

Additionally, when good work practices are observed, recognize the laboratory and follow procedures according to the **Safety Recognition Program**.

e. *Closing Evaluation*

Prior to leaving the laboratory, discuss the findings observed, provide recommendations to correct findings, and schedule the first follow-up date (48-hours and/or 30 days). Explain the follow-up visit timeline, as well as, corrective action timeline. Laboratory representatives are encouraged to update the report as findings are corrected; however, EH&S will return on scheduled follow-up date to verify findings and update the report on behalf of the laboratory. Provide contact information and show appreciation for an opportunity to conduct the evaluation.

## 6. REPORT

Within one business day of the evaluation, draft descriptive report and submit to Research Safety Programs Manager for review within 24 hours. Be sure to capture all observations and discussions in the comment box. Once approved, the report will be sent to the PI, laboratory delegate, and Department Chairs. The report includes findings, due dates for the corrective actions, and contact information of the EH&S representative. If any findings include submitting a work order to Facilities Services, be sure to include a tag and work order number.

## 7. FOLLOW-UP / VERIFICATION

Follow-up and verification of corrected deficiencies should be conducted during designated correction time. For major deficiencies, it is important to follow up within 48 hours and work closely with the PI / laboratory to correct deficiencies. When corrective actions are due or the PI/RP “Marks As Ready for Verification” in Inspect, conduct a follow-up visit to verify that the issues have, in fact, been corrected. When corrective actions are verified, select “Resolved” to indicate the date of verification in the report.

When corrective actions are not corrected, the following should be done:

- “Mark as Not Resolved” – select this if deficiency have not been resolved
- “Mark as In Progress” – select this if deficiency is requires additional time to resolve.
- “Mark as No Further Action” – select this if deficiency no longer applies (e.g. training deficiency was identified, but individual is no longer with the laboratory)

## 8. ESCALATION PROCESS

Time Elapsed	PI/RP Notified in addition to	CC in notification
48-hours	Send updated report to Laboratory Delegate/LSO	
30 Days	Send updated report to Laboratory Delegate/LSO	

45 Days	<ul style="list-style-type: none"> <li>• Research Safety Programs Manager</li> <li>• EH&amp;S Executive Director</li> <li>• Department Chair</li> <li>• College Safety Representative</li> </ul>	
60 Days	Division Deans	Research Safety Programs Manager, EH&S Executive Director, Department Chair, College Safety Representative, Laboratory Delegate, LSO
75 Days	Dean	Research Safety Programs Manager, EH&S Executive Director, Department Chair, Divisional Deans, College Safety Representative, Laboratory Delegate, LSO
100 Days	<ul style="list-style-type: none"> <li>• Vice Chancellor of Research and Economic Development</li> <li>• Vice Chancellor of Planning, Budget, and Administration</li> </ul>	Research Safety Programs Manager, EH&S Executive Director, Department Chair, Divisional Deans, College Safety Representative, Laboratory Delegate, LSO

## 9. MID-YEAR CHECK-IN

Approximately six months after initial evaluation date, conduct a mid-year check-in with the laboratories.

The following items should be reviewed during the mid-year check-in:

- Review last evaluation to determine if EH&S can assist or provide any resources to the laboratories to ensure laboratories operate in a safe and healthy condition.
- Determine whether research processes have changed. Provide updated SOPs to new processes.
- Conduct a PPE Compliance Check.
- Verify/Update assigned locations and rosters.
- Identify unsafe and unhealthy conditions and provide a reminder notification to the PI/RP.
- Review/Update door placards, signs and labels.
- Review/Update LHAT roster for current and accurate account of laboratory personnel.
- Review training records and identify pending/missing training.
- Use Mid-Year Check-In checklist to capture visit.

## 10. NO HAZARDS

When a PI identifies no hazards in assigned space in Laboratory Hazard Assessment (LHAT), EH&S Specialists should conduct a site visit to verify there are no hazards in the space. Once the space is verified hazard-free, post the hazard-free sign at the door. These spaces should be verified annually.